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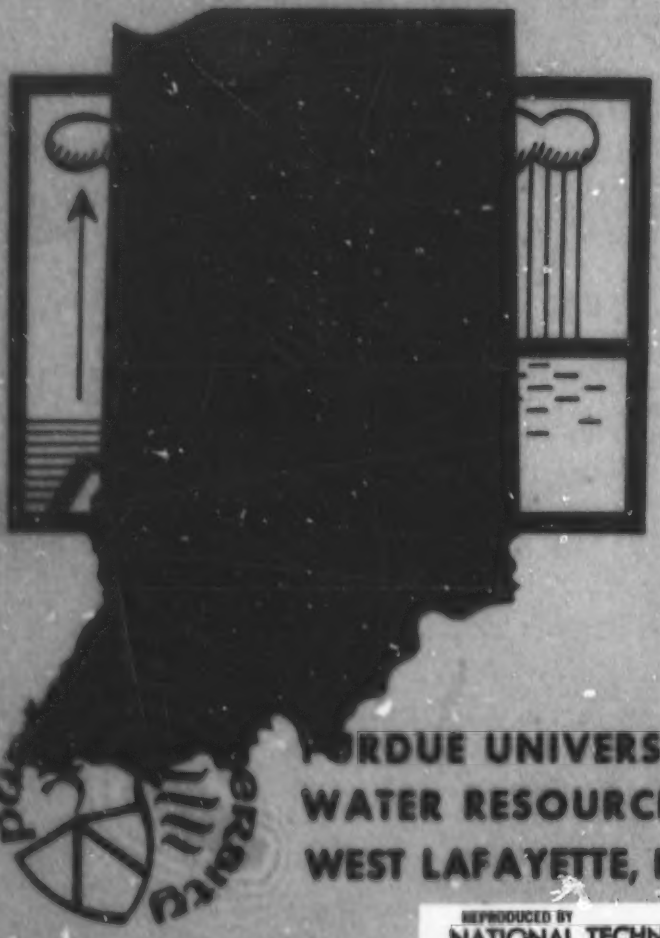
Urban Water Resources Policy Alternatives: A Sociological Analysis of Differential Perspectives



by

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December 1978

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URBAN WATER RESOURCES POLICY ALTERNATIVES: A SOCIOLOGICAL ANALYSIS OF DIFFERENTIAL PERSPECTIVES

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This is a partial completion report contributing to the project entitled "Systematic Development of Methodologies in Planning Urban Water Resources for Medium Size Communities: Phase II"

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ABSTRACT

The purpose of this study is to examine the acceptability to community leaders and the general public of selected urban water resources policy alternatives. The orientation is methodological; using the survey method, questions are deliberately varied in generality-specificity, and comparisons are made on the effect of experience with water problems and location of residence (urban, transitional, rural) on acceptability of alternative solutions. Data are from personal interviews with 46 leaders and a sample of 139 other residents of Tippecanoe County, Indiana. It was found that asking more specific questions produced greater indications of concern with the environment and water pollution. Many of the differences between leaders and nonleaders were small; however, some important differences were found. For example, although leaders view themselves as more conservative, they were more liberal on some policy issues, e.g., willingness to pay more to combat water pollution and a firm policy to prevent building in wetlands. Only limited differences were found across residential location, with wetlands policy being a specific example of a substantial difference. Respondents expressed considerable concern over two drainage alternatives, retention basins and open ditches, whether they had direct experience with them or not. They also expressed a strong belief in citizen participation and a preference for local government involvement in policy decisions. Despite these differences, multiple regression did not show any consistent pattern when using seven indicators of persons' social structural position to predict his/her position on each of six policy variables. However, multiple regression did show that there are substantial differences in who participates in the policy process. This suggests that some method, like the survey, can be an important information source for obtaining a broader range of citizen inputs than would otherwise occur.

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Introduction

The purpose of this study is to evaluate the acceptability of selected urban water resources policy alternatives, by both community leaders and the general public. The implementation of water projects requires acceptance by such people. This may be a fairly routine matter for most smaller projects, but for larger ones there may be considerable discussion by leaders and residents, and even some disagreement or conflict over whether a project is necessary or whether a specific proposal is the best plan. We focus on a series of water related issues concerning drainage, land use, urban growth and environmental quality. The issues deliberately vary from being quite specific to quite general. The reason for this, as well as the other comparisons in the analysis, is the overall methodological orientation of the study. While we do examine substantive issues, we are just as concerned about the methodological approach used and its potential for more application. The social survey method is used, with interviews conducted with leaders and the general public. This, of course, is not a new method; its use as a data source has recently been discussed by Heberlein (1976) and Finsterbusch (1977). Its use here focuses on comparisons between the two groups (leaders and general population) across different issues.

The development of urban areas in general, and more specifically those aspects involving water resources, requires public policy decisions. Many water resource decisions, such as upgrading treatment plant facilities, the extension of water supply and sewer lines into rural areas and the development or preservation of wetlands and flood plains, affect the whole community and often surrounding areas as well. The increased costs of such facilities, lines and developments are borne by residents and industries that are served by them. Thus, the preferences and perspectives of community residents become factors in decisions, in addition to factors of cost, technical feasibility and environmental quality or public health.

Community leaders in official positions such as mayors, city council members, or county commissioners must act on most of these policy decisions. Other public officials, such as engineers, health officers and planners, are regularly involved in making and implementing decisions. Additionally, other community leaders, such as heads of businesses and industries, who are likely to be major users of water and sewage facilities or dependent on the growth potential of the area, are often very concerned about such decisions.

Citizens, too, generally are affected by these decisions. For example, the construction or expansion of major water and sewage facilities is very costly and often represents a large increase in user charges or taxes for residents. Consequently, policy questions may arise concerning the distribution of these charges.

Obviously not all citizens or leaders become involved in every water resource decision in the community. But when they feel they have a substantial interest in the outcome of a decision, the probability of their involvement increases. It also may increase if they feel their participation may influence the decision outcome.[1]

The Research Method

Conceptually the purpose is to evaluate the acceptability of alternative water resources policies among community leaders and the general public. There are many implicit problems in this. For example: How specific should the policy alternatives be? How many should be posed? How important are these issues perceived to be compared to other community issues? How familiar are people with and knowledgeable about water issues?

The approach taken in this study assumes that water policy decisions at the community level are pragmatic, and not made in the abstract; that is, water "problems" are usually in need of rather immediate solutions and their importance is rated in comparison to other problems. Decisions are likely to be made only when there is a rather immediate

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[1] For a detailed discussion of the theory underlying this perspective see Peter V. Marsden and Edward O. Laumann, "Collective Action in a Community Elite." Pp. 199-250 in Roland J. Liebert and Allen W. Imershein (eds.), Power, Paradigms and Community Research, Beverly Hills, California, Sage Publications, 1977.

need, such as an inadequate water supply or a mandatory requirement for improved water or sewage treatment facilities.

Besides being the result of pragmatic decisions, detailed community plans are likely to be specific to each community; comparability across communities might be found more easily among the basic or more general alternatives within the plans. Thus methodologically, we might be able to develop approaches that would be useful in different cities at this more general level.

We chose to vary the specificity of questions, asking more detailed questions about drainage. Somewhat more general questions were asked about land use and urban growth, and the most general questions were asked about pollution or environment. There were two reasons for this. One was to see if there were response patterns associated with the specificity of the questions, for example would more people express concern about pollution in general or about a specific drainage issue. The second reason was that the choice of drainage as the most specific issue paralleled the focus on urban drainage systems in the overall study of which this was one part.

Knowledge of and experience with issues also were considered. One reason for this consideration is that knowledge and experience affect a person's present position on an issue. Simple factual questions testing knowledge, e.g., where does your drinking water come from, tell something about the importance attached to an issue by whether or not persons know the answer. People who have experienced flooding or low water pressure may feel differently about policy questions than those who have not. Another reason for this consideration of knowledge and experience is that as an issue becomes more salient in a community and people acquire more knowledge about and experience with it, their position on the issue may change. However, we only gathered data at one point in time because it was not part of our purpose to study change over time.

We also sought some information on variables that may be indicative of a person's participation in the policy-making process. This set of questions concerned whether the respondents follow governmental activities in the news media, whether citizens should or should not get involved and whether they themselves had been involved.

This conceptual approach allowed us to look at citizens' and leaders' perspectives on water resource policy issues, and also at factors which may help us understand differences in those perspectives.

The data for this study were gathered by personal interviews. The interviews generally took 30 to 45 minutes. The sample of the general public was a stratified area probability sample. It was drawn from the population of eight townships in essentially the northeast half of Tippecanoe County, Indiana. This includes the two cities of Lafayette and West Lafayette (1970 populations of 44,955 and 19,157, respectively), and most of the area that is being relatively directly affected by urbanization, changing most often from agricultural to urban land uses.

Since the county is a Standard Metropolitan Statistical Area, census tract and block data were available for the urbanized area. Two stratification criteria were used in the sampling plan. One was geographic (or residential) location with the categories being (a) urbanized, where land use is most intensive, and population the most dense; (b) transitional, surrounding the urbanized area, where there is some intensive land use but also land changing from agricultural to residential, business or industrial (the boundaries for these areas did not always follow existing political boundaries, and were somewhat arbitrary); and (c) rural, that remaining area outside of the transitional boundaries containing rural and smaller town (less than 1000) residents. The second stratification criterion was social class, using mean housing value by block as reported in the 1970 U.S. Census. While these figures would have been greatly affected by inflation, it was not felt that this would be a highly differential affect, and thus their use for placing blocks into high, medium and low categories would be satisfactory. There were two restrictions on the use of the social class criterion: (1) these data were not available for the rural area. Because this was a large area with relatively few persons, it was divided into three sub-areas, north, east and

south, using township boundaries. "Blocks" of one to two square miles were created as the primary sampling units, with block boundaries following roads. Two blocks were selected within each of the three areas to give geographical spread. "Blocks" had to be created similarly in parts of the transitional area. (2) Within urban and transitional areas data on housing value were not available for all blocks, because of too few owner occupied housing units within them. These blocks were placed in a fourth stratum called "Not Elsewhere Classified." The number of dwelling units selected randomly within each stratum was proportional to the total number of dwelling units in 1970. Because the number of dwelling units per block varied greatly among strata it was necessary to use different sampling fractions within strata so that the final selection of dwelling units would be proportional. (Five tracts within the study area were omitted as they had been throughout this study because they comprise Purdue University or an area adjacent to the university that is largely student apartments with high turnover in residents.) The sampling plan is summarized in Table 1.

Table 1. Summary of sampling plan

Area and social class strata	No. of blocks per strata	No. of blocks selected	No. of respondents expected	No. of respondents obtained
Urban				
High	128	4	19	14
Medium	360	11	53	49
Low	121	4	18	13
NEC[a]	227	7	33	15
SUB-TOTAL	836	26	123	91
Transitional				
High	54	5	23	11
Medium	22	2	9	7
Low	2	1	1	1
NEC[a]	38	3	16	10
SUB-TOTAL	116	11	49	29
Rural[b]	117	6	28	19
TOTAL	1069	43	200	139

[a]NEC: Not Elsewhere Classified - see text for explanation.

[b]Data for social class strata were not available for Rural Area.

The sample size selected was 200 adult residents, one per dwelling unit, age 18 or older. This is not a particularly large sample for survey research; however, it is large enough to provide variation in responses and thus to examine the adequacy of this approach.

The completion rate of 70 percent of the interviews was low in the experience of the principle investigator. A substantial part of this was attributable to just a few blocks in which considerable difficulty was encountered finding residents at home, even though interviewing was carried out into the early evening and on weekends. Three calls were made at a house to obtain an interview, before replacing it. However, this is a time consuming and costly procedure. These problem blocks contained rather new, middle class houses. We can only speculate about the reasons for this, whether it was some unique situation, the fact that interviewing was done around the end of the school year or an increasing number of households with either a single parent or both parents (adults) working.

The sample of community leaders combined both a "positional" and "reputational" approach. Eighty-three different positional leaders were identified. These included mayors, county commissioners, city and county council members, school superintendents, chief executives of businesses with 100 or more employees and members of the Chamber of Commerce Board of Directors. Five leaders, the mayors and county commissioners, were purposely selected because their positions give them the greatest overall view of issues. Thirty-nine, or half, of the remaining 78 leaders were randomly selected. These leaders were asked as one of the interview questions to nominate persons they saw as leaders. Such persons who received two or more nominations were then contacted for an interview.

The initial contact with the leaders to be interviewed was a letter from Dr. Dan Wiersma, Director, Purdue University Water Resources Research Center, explaining in general terms the nature of the project. This was followed by a telephone call to set up an appointment.

Of the initial group of 43 positional leaders, 38 were interviewed. An additional 15 persons, who were not among the initial 43, were nominated at least twice. Eight of them were interviewed.

Thus, the total number of leaders interviewed was 46.

Findings

The approach taken here is to move from more general to more specific issues, comparing respondents by whether they lived in the urban, transitional or rural area, or were leaders. In some instances, the residential location variable included data on where the leaders lived, too; such instances are identified in the text. The findings are in three parts: (1) attitudes, experience and knowledge; (2) policy issues and (3) public involvement.

Attitudes, Experience and Knowledge

One approach to determining how important an issue is in people's minds is to ask a very general question like: "What would you say is the most important problem facing this community right now?" We asked this question very early in each interview. Only three of the 46 leaders and five of the 139 general public respondents felt that some type of water, land use, environment or pollution issue was most important. Thus, these issues were not thought of as major problems when respondents were asked this general question which had no specific topical focus.

The number of people who felt there were at least some environmental problems increased when asked more directly: "Do you think there are any problems with the environment in this area, now or in the last few years?" As Table 2 indicates, about 47 percent of both the leaders and the general public said no, there were none. The urban respondents in particular saw no problem (58 percent). This was an even more striking finding among the urban residents who made less than $10,000 per year; 69 percent of this group felt that there were no environmental problems. In contrast, almost two-thirds of the transitional and rural residents generally saw some problems.

Similar questions were asked concerning educational and poverty problems. Almost as many nonleaders who saw no environmental problems saw no educational or poverty problems (see Table 3). Rural nonleaders were more likely in all three cases to see "some" or "many" problems than the other nonleaders were. The variation among the four categories of respondents is particularly striking when we examine the responses to the educational problems question, 75 percent of the rural residents saw "some" or "many" educational problems whereas the figures for leaders are 48 percent, urbanites, 21 percent and transitional residents, 32 percent. Leaders were less likely to see some or many environmental problems (24 percent) than educational (48 percent) or poverty (42 percent) problems. Overall, it appears that environmental problems in Tippecanoe County were less noticeable than educational or poverty problems except in transition areas. However, this does not tell us how concerned each respondent was with the quality of the environment.

Table 2. Extent of environmental problems indicated in this area by leaders and nonleaders*

Environmental problems	Leaders	Nonleaders* Total	Urban	Trans.	Rural
no, none	47%	49%	58%	33%	24%
yes, a few	29	26	23	33	29
yes, some	20	23	19	30	35
yes, many	4	2	0	4	12
TOTAL	100%	100%	100%	100%	100%
(n)	(45)	(134)	(90)	(27)	(17)

*Nonleaders are further subdivided by area of residence as described in the Research Method section of this report.

Table 3. Percent of leaders and nonleaders reporting some or many educational, environmental and poverty problems

Type of problem	Leaders	Nonleaders Total	Urban	Trans.	Rural
education	48%	29%	21%	32%	75%
environment	24	25	19	33	47
poverty	42	34	31	32	53

Those respondents who indicated any environmental problem were asked how concerned they were about the quality of the environment in this area. Of those who thought there were problems, the majority (74 percent of all respondents) were somewhat or very concerned about them. Concern among rural residents and leaders was particularly high with 17 percent of the former being very concerned and 75

percent somewhat concerned (see Table 4). The comparable figures among leaders were 48 and 32 percent. Again the lower-income urban residents (those urban residents making $0 to $9,999) were least likely to pick "somewhat" or "very concerned;" only 44 percent of them picked the former and none chose the latter category.

Table 4. Environmental concern by leaders and nonleaders

Environmental concern	Leaders	Nonleaders			
		Total	Urban	Trans.	Rural
not concerned at all	0%	4%	3%	11%	0%
somewhat unconcerned	4	3	5	0	0
not particularly concerned	16	21	27	17	8
somewhat concerned	32	54	57	33	75
very concerned	48	18	8	39	17
TOTAL (n)	100% (25)	100% (67)	100% (37)	100% (18)	100% (12)

Two conclusions can be drawn from these data. First, the very general "most important problem" question provides a very different view than the more specific "environmental problems" question of the extent to which people feel there are local environmental problems. It is not surprising that different questions, or the way they are worded, produce different answers. The level of concern question, also a rather specific question shows that there can be substantial concern even where the number of problems is not perceived to be large. Thus, the very general question may under-estimate the depth of concern respondents have. A second conclusion is the importance of looking at sub-groups for possible differences. Overall, if all respondents were lumped together there would not be a great deal of environmental concern expressed in these three questions. Leaders differ only a little from the total for the general sample. But when just the two variables of location of residence and yearly income are considered, and the variation within categories is included, a different picture emerges.

Four rather typical problems people may have with water are flooding or wet basements, sewer pipes backing up, low water pressure and water being cut off for repairs. Respondents were asked whether they had experienced these problems, either in their present homes or elsewhere. As shown in Table 5, rural residents generally did not report any of these problems. Otherwise there was little variation. Flooding or wet basements were most frequent, reported by 46 percent of leaders and urban residents and 52 percent of transitional residents. Water being cut off for repairs (not because of bill payment problems) was second, varying only from zero to 44 percent. Drain or sewer pipes backing up was less common, varying from 5 to 29 percent. Low water pressure varied somewhat, with only 4 percent of leaders having experienced that compared to 20 percent of urban and 17 percent of transitional residents. These water problems had not occurred to the great majority of persons, but had to a large enough number to suggest general public awareness of them.

Table 5. Percentage of leaders and nonleaders saying yes to experience with water problems

Water problem	Leader	Nonleaders			
		Total	Urban	Trans.	Rural
flooding in house after rain	46%	43%	46%	52%	16%
"backed-up" sewer or drainage pipes	24	25	29	24	5
water pressure too low	4	17	20	17	0
water cut-off because of supply problem	44	36	43	39	0

Data on "knowledge" about water supply, prices, quality and treatment also were obtained. While there were in a sense right and wrong answers to these questions, answers could and did vary considerably in degree of precision. Our interest is in obtaining only an estimate of the amount of knowledge, or lack of knowledge. Thus, we report only those who indicated they did not know the answer, or whose answer quite clearly reflected a lack of knowledge. The great majority did know where their water came from; only 27 of the 185 respondents did

not, or gave non-knowledgeable answers, that is, answers that ranged from very general or vague to incorrect. Twenty-two gave non-knowledgeable responses to the name of their water company, and 26 gave such responses to why tap water has a brownish color to it occasionally. A few more people, 41, didn't know where their household sewage is treated. The great majority, generally 80 percent or more, of these less knowledgeable respondents were urban residents. Two additional questions showed less knowledge. "Who is responsible for making decisions concerning the price of water in your community?" We considered the state Public Service Commission the most correct answer (excluding those persons with private systems), but only 11 gave this or approximately this answer. More respondents, 66, attributed this responsibility to city government, and an additional 22 attributed it to the water company/works. In Lafayette water is supplied by a city utility, and rates must be approved by the city council before they go to the Public Service Commission for the final decision. In West Lafayette, a private utility is the supplier, and it can go directly to the Commission for rate changes. An additional 44 persons either didn't know or gave other answers. In response to "who is responsible for making decisions concerning the quality of water, that is checking to see that it is safe to drink?" only 23 named the State Board of Health. An additional 14 said some other or an unspecified state agency. Fifty-nine replied some local official, 19 said "government," 12 said individuals themselves, and 58 either didn't know or gave some other answer. Less knowledgeable respondents were distributed throughout all residence areas and leaders, with regard to checking water quality.

In addition to what these data tell us directly about knowledge of water resource issues of seemingly direct relevance to persons, they say something about how people perceive the decision making process. A large number of respondents think first of local government as responsible for decisions, in this case on water prices and quality. Leaders were only somewhat more likely to think of state government than the general public was. This suggests the importance of local government in people's minds despite the substantial role of state (and federal) government in water resources. Additional data on this point are considered below.

Policy Issues

There are three sub-parts to this section. The first deals with water pollution, how serious people perceive it to be and whether enough is being done about it. The second topic is land use policy and urban growth. Third is drainage, including how people view retention basins, open ditches and drainage policy.

Water pollution was not seen as a serious problem by most respondents (see Table 6). When asked "Have you ever been concerned about the quality of your drinking water here?", 83 percent said "no." As Table 7 shows, in response to "How serious do you think water pollution is in Tippecanoe County?", 26 percent said "not serious at all," 41 percent said "not very serious," and 20 percent said "somewhat serious." Only 13 percent replied that it is serious or very serious.

Table 6. Concern about water quality in local city by leader and nonleaders

Concerned about quality of drinking water	Leader	Nonleaders Total	Urban	Trans.	Rural
yes	7%	19%	21%	14%	21%
uncertain	0	1	2	0	0
no	94	79	77	86	79
TOTAL	100%	100%	100%	100%	100%
(n)	(46)	(139)	(91)	(29)	(19)

Table 7. Seriousness of water pollution in Tippecanoe County as perceived by leaders and nonleaders

Seriousness of water pollution	Leader	Nonleaders Total	Urban	Trans.	Rural
not serious at all	28%	25%	33%	11%	7%
not very serious	41	40	38	48	36
somewhat serious	22	20	19	19	29
serious	7	8	6	15	7
very serious	2	7	4	7	21
TOTAL	100%	100%	100%	100%	100%
(n)	(46)	(122)	(81)	(27)	(14)

If we just look at nonleaders and categorize them by income we find that those making between $10,000 and $19,999 (52%) were least likely to chose "not serious at all" or "not very serious." If we categorize nonleaders by income and residential location we find that for urban residents, as income increases the respondents are less inclined to choose "not serious at all" or "not very serious"; for transition residents the opposite relationship holds -- with increasing income, the residents are more likely to pick "not serious at all" or "not very serious." The sample size was too small to accurately say something about rural residents.

Those two questions were followed by two others that were intended to help interpret the previous responses by asking the direction people saw pollution control as going. However, they produced mixed results. A little over half of the respondents saw the problem of water pollution getting better in the next five years, as a result of recent federal and state legislation. About 26 percent saw it getting worse. In partial contrast to that, 54 percent thought current pollution control efforts were about right, and 40 percent thought they were too little. Only six percent thought they were too much. It appears that there is a sizable minority, about one-third of the respondents, who perceive water pollution as at least somewhat serious and think more should be done. The fact that about half thought current control efforts were about right has to be viewed in relationship to only a fourth who thought pollution was not serious at all.

We again sought to determine the locus of government responsibility by asking "Some people say that water pollution is the federal government's problem. Do you agree with this?" Two-thirds of the respondents disagreed, and only 24 percent agreed. There was essentially no difference between leaders and nonleaders on this question.

Another approach to assessing how strongly people feel about a public policy issue is to ask how much more they would pay in taxes to deal with the issue. This was done by asking first "Would you be willing to pay more in taxes if the increase would effectively combat water pollution?" Sixty-three percent said yes, they would. They were asked "How much more would you be willing to pay?" The answer to this was surprising statistically, because it was a very flat distribution, with 13 persons saying $1.00 or less per year, 14 saying $100.00 or more per year, and responses ranging from 12 to 16 for the four intermediate categories. There may have been a social desirability affect operating here. This possibility arises from the fact that on the preceding question 112 respondents had said yes they would pay more, but on this second question only 81 answered with a specific amount they would pay. This is a decrease of almost 30 percent in number of respondents who thought they should say yes, they would pay more, but who didn't really want to. When asked how much they would pay, they said they didn't know. Of course, this also could be because the respondents found it difficult to answer this specific question. They felt that their answer would depend on what their income would be and how effective a job the government was doing already.

The differences among leaders and residence location categories have not been discussed so far under policy issues, since they usually have been small. In general, leaders saw water pollution as less serious and getting better more often than the general public. They were also willing to pay more in taxes, and larger amounts, than the general public. This latter finding was true even when we compared leaders with nonleaders earning within the same income range. The difference was especially noticeable between urban leaders and urban nonleaders earning over $30,000 per year. That is, income has no effect on this relationship.

Issues in land use policy are many and often complex. We could only deal with a few of these. We chose to focus on preserving farm land and natural areas as opposed to urban growth, plus some related questions specifically on drainage.

The loss of farm land to urban uses is becoming a major policy issue in many areas. Our initial question on this was: "As you know, many areas of farm land are converted to urban uses such as businesses, industries and homes every year. How do you feel about this loss of farm land?" The majority of respondents were concerned about this loss: 29

percent were very concerned, 43 percent were mildly concerned, and 29 percent were not concerned (see Table 8). There is a tendency for urban and transitional residents (including leaders) who have higher incomes to express less concern for the loss of farms than those with lower annual incomes. No concern is particularly noticeable among nonleaders making over $30,000 per year. The concern for prime farm land was as strong with 72 percent seeing a need to explore or develop ways to preserve it. As shown in Tables 8 and 9, leaders were somewhat less concerned than the general public in their responses to both of these questions. There was a strong consensus for the "need for parts of the countryside in Tippecanoe County to be kept in a natural state for future generations to appreciate and use," with 89 percent of the respondents saying yes (see Table 10). In contrast to these questions on preserving rural and natural areas, two questions were asked about urban growth. The first asked "One way for cities to grow is by annexation of surrounding housing developments and rural areas. Do you feel these areas should be brought into the city or not?" Table 11 shows that responses were fairly evenly split with 34 percent saying yes (either yes, definitely or yes, but only if people outside the city want to be annexed), 43 percent responding that it depends on circumstances and 23 percent indicating no (either no, people should live in the area of their choice or not under any circumstances). More specifically, looking at those who said yes, most leaders picked "yes, definitely under any circumstances"; only one leader picked "yes, but only if people outside the city want to be annexed." On the other hand, nonleaders especially those in the $20,000 to $29,999 income range (there were no rural residents in this range) felt people should be annexed only if they wanted to be. The second question was "Growth and jobs often mean new industry in a community. Sometimes this may also mean some air or water pollution. Would you be in favor of allowing an industry to build a factory which would bring new jobs into the county, but which would cause some pollution at the same time?" Again, as indicated by Table 12, respondents were divided fairly evenly; but this time slightly more were against growth, with 36 percent saying no, 40 percent indicating that it depends on circumstances and 24 percent responding yes. Leaders were somewhat more in favor of urban growth on both of these questions than the general public.

Table 8. Concern about loss of farm land among leaders and nonleaders

Loss of farmland	Leader	Nonleaders Total	Urban	Trans.	Rural
not concerned	42%	24%	23%	31%	17%
mildly concerned	29	47	52	38	39
very concerned	29	29	25	31	44
Total	100%	100%	100%	100%	100%
(n)	(45)	(134)	(87)	(29)	(18)

Table 9. Expressed need for preserving prime farm land in Indiana by leaders and nonleaders

Need to preserve farm land	Leader	Nonleaders Total	Urban	Trans.	Rural
yes	59%	77%	80%	72%	68%
undecided	4	9	9	3	16
no	37	14	11	24	16
Total	100%	100%	100%	100%*	100%
(n)	(46)	(139)	(91)	(29)	(19)

*This column does not add to 100% because of rounding error.

Table 10. Expressed need for preserving parts of countyside in Tippecanoe County by leaders and nonleaders

Need to preserve country side	Leader	Nonleaders Total	Urban	Trans.	Rural
yes	4%	8%	8%	3%	16%
undecided	7	4	6	0	0
no	89	88	87	97	84
Total	100%	100%	100%*	100%	100%
(n)	(46)	(138)	(90)	(29)	(19)

*This column does not add to 100% because of rounding error.

Table 11. Approval of annexation of areas by leaders and nonleaders.

Annexation	Leader	Nonleaders			
		Total	Urban	Trans.	Rural
yes, definitely under any circumstances	39%	11%	15%	7%	0%
yes, but only if residents want to be annexed	2	20	17	31	20
it would depend on circumstances	52	39	34	41	67
no, people should live in area of choice	5	16	19	14	0
no, not under any circumstances	2	13	15	7	13
Total	100%	100%*	100%	100%	100%
(n)	(44)	(132)	(88)	(29)	(15)

*This column does not add to 100% because of rounding error.

Table 12. Approval of new factory bringing jobs and pollution with it by leader and nonleaders.

New factory with pollution	Leader	Nonleaders			
		Total	Urban	Trans.	Rural
yes, under any circumstances	7%	4%	5%	4%	0%
yes, unless the pollution is serious	26	18	16	25	17
it would depend on circumstances	39	40	44	25	44
no, unless jobs were essential	7	17	18	21	6
no, not under any circumstances	22	22	18	25	33
Total	100%*	100%*	100%*	100%	100%
(n)	(46)	(135)	(89)	(28)	(18)

*This column does not add to 100% because of rounding error.

This series of land use policy questions pose three alternatives which are not entirely compatible with each other, preserving farm land, preserving natural areas and favoring urban growth. The potential incompatibility of the answers can be seen in the high percentages who favor preservation of farm land and natural areas, and yet only a comparatively small percent oppose annexation. Such data are frustrating to efficient decision making, and therefore might be rejected. It is possible that the majority of respondents feel that natural areas and farm land should be preserved, but given that the land already has been developed then it should be annexed. This conceptualization thus suggests less incompatability, and instead emphasizes the complex and contrasting values of a community, which need to be considered for the implementation of natural resources decisions.

The most specific questions in this study were about drainage, including experience with drainage problems, two types of drainage systems and related policy issues. As indicated above, flooding or wet basements had been experienced at some time by about half of all respondents, more than any of the other water problems. Respondents were asked an additional question tapping their experience: "After a heavy rain are there places around here where water stands for some time before it drains away?" The majority, 60 percent, said no. Those who said yes, water did stand after a heavy rain, were asked if this was a serious problem. Nine percent (of all respondents) indicated this was not a problem, 22 percent said it was a minor problem, and nine percent stated it was a major problem in their neighborhood. Rural residents were somewhat more likely to report standing as a minor problem. However, this was clearly a problem for at least some residents in all areas.

The two drainage systems we wanted to know about were retention basins and open ditches. There are a few retention basins in the study area, and open ditches are common in the rural areas of the state. However, most of the respondents were urban residents, and therefore we chose to introduce this set of questions with this statement:

> When very heavy rains occur in urban areas there is often flooding in streets or peoples' yards. There are a number of ways that this run-off water can be controlled or moved out of the area. The usual way in cities is through under-ground pipes. Additional ways include retention basins and open ditches.

Respondents were then asked if they had ever lived in an area where retention basins were used. Retention basins were defined for respondents as "usually low, grassy areas, which hold water for a few hours after a fairly heavy rain, and then dry

out as the water drains away." Nine out of ten persons said they never had lived in an area where retention basins were used. Of the few who said they had, the majority (9 out of 13) were leaders. However, this did not keep most respondents from having opinions about them. This was particularly characteristic of leaders, with the general public more likely to indicate they did not know much about them. Many saw problems associated with proper design, construction and maintenance. Others were concerned about mosquitoes and safety for children.

More persons had lived in areas where open ditches were used, but still two out of three said they had not. They also had more comments about them, including whether ditches work satisfactorily. Although some felt ditches work alright, many viewed them with qualifications or saw problems. The following two statements, one by a leader and one by a nonleader, respectively, are representative of this perspective: "It depends on population density, o.k. for suburbs or rural areas, but not for urban areas" and "[They work alright] . . . if there's enough fall, or if not mosquito breeding; dangerous to little kids."

It is important to emphasize the structure of questions used here. The first two questions were: (1) Have you ever lived in an area where retention basins were used for drainage? (2) Do you know anything about them? Do they work alright, or are there problems with them for people living near them? The same questions then were asked for open ditches. In both cases the majority said no to the first question, but had comments about problems or potential problems on the second question. A third question posed was: "How would you feel about living near a retention basin?," or ". . . near an open ditch?" The level of concern expressed in response to these questions was greater than to the preceding question, particularly for the general public. For retention basins, (see Table 13) 36 percent of all respondents expressed no concern, 39 percent were a "little concerned" and 25 percent were "quite or very concerned." The comparable figures for open ditches were 34, 32 and 34 percents, respectively (see Table 14). Mosquitoes and other health and safety reasons were frequently given as the reasons for concern.

Table 13. Concern about living near a retention basin by leaders and nonleaders

Concern about retention basins	Leader	Nonleaders			
		Total	Urban	Trans.	Rural
no particular concern	36%	36%	34%	37%	42%
a little concerned	31	42	47	26	42
quite concerned	33	23	20	37	16
Total	100%	100%	100%*	100%	100%
(n)	(45)	(132)	(86)	(27)	(19)

*This column does not add to 100% because of rounding error.

Table 14. Concern about living near an open drainage ditch by leaders and nonleaders.

Concern about drainage ditch	Leader	Nonleaders			
		Total	Urban	Trans.	Rural
no particular concern	41%	31%	27%	31%	50%
a little concerned	26	35	40	21	33
quite concerned	33	35	34	48	17
Total	100%	100%*	100%*	100%	100%
(n)	(46)	(46)	(86)	(29)	(18)

*This column may not actually add up to 100% due to rounding error.

Rural residents were the least concerned about either drainage method, perhaps reflecting greater familiarity with open ditches and farm ponds as similar to retention basins. Transition area residents were the most concerned about both methods. They live in the area undergoing the most rapid land use change, by definition. Thus, they may be more likely than urban residents to feel these drainage systems could be used in future developments in their neighborhoods. This points to one of the most difficult issues in the policy decision making process. Who should participate in the process? Should it be only those people most directly effected, e.g., transition area residents, or all residents, including urban and rural? The answer is a separate policy issue outside of the scope of this study. However, in terms of a data base for input into such decision, sources of variation (such as

location of residence or past experience) should be included rather than presenting only overall or univariate data (such as the percent favoring a particular design).

This section was concluded with two questions on land use policy in relation to drainage. The first was a general question that asked "Who should be responsible for seeing that adequate drainage exists in an area, individual property owners, the developer, local, state or federal government?" The developer and state government were both named by about 60 percent of the respondents (see Table 15). This varied from about 50 to 67 percent among the respondent categories, with two exceptions. Eighty-nine percent of leaders thought local government should be responsible, but only 26 percent of rural residents thought it should - they predominantly felt developers should be. Only 23 percent felt property owners should be responsible, 22 percent said state government and 12 percent mentioned federal government. There was no significant difference between those who had and those who had not experienced flooding or wet basements in whom they felt should be responsible for adequate drainage, nor between those who had and those who had not experienced sewers backing up.

Table 15. Who should be responsible for drainage by leaders and nonleaders

Responsibility for drainage	Leader	Nonleaders			
		Total	Urban	Trans.	Rural
individual property owners	24%	23%	21%	21%	37%
the developer	67	57	53	59	68
local government	91	54	56	66	26
state government	26	21	21	21	21
federal government	13	12	13	3	21
(n)	(46)	(136)	(88)	(29)	(19)

Then, a more specific policy issue was raised. "One way to deal with this problem [of poor drainage] is to have a firm policy to prevent people from building in wetlands--areas that are low or poorly drained, and frequently have water standing in them. Would you be in favor of or opposed to such a firm land use policy?" As Table 16 indicates, the majority of respondents favored such a policy. There was substantial variation among groups, however, with 80 percent of the leaders, 72 percent of the transition residents, 49 of the percent urban and 48 percent of the rural residents being very or somewhat in favor of such a policy. Only 7 percent were very opposed and 15 percent somewhat opposed, with the remainder uncertain. Again, experience with a flooded or wet basement, or sewers backed up, was not related to any position on this land use policy. When asked why they took the position they did, leaders had many more reasons than the general public. Besides recognizing the undesirable and potentially unhealthy living conditions, leaders were more aware of potential future problems including the possible expectation for governmental assistance. For example, one "pro-firm policy advocate" said "Because the developer wouldn't be tempted to build and walk away leaving local government stuck with an expensive problem." In contrast to this awareness of the complexities resulting from developing these areas were such views as "the land can be drained" and "its the property owner's land to use as he/she wishes." These latter views most often were expressed by the general public.

Table 16. Position on firm land use policy among leaders and nonleaders

Position on firm land use policy	Leaders	Nonleaders			
		Total	Urban	Trans.	Rural
very opposed	9%	7%	6%	4%	16%
somewhat opposed	9	17	20	14	5
uncertain	2	24	26	11	32
somewhat in favor	22	30	34	29	16
very in favor	58	23	14	43	32
Total	100%	100%	100%*	100%*	100%*
(n)	(45)	(136)	(89)	(28)	(19)

*This column does not add up to 100% because of rounding error.

The most important points to note in summarizing this part of the section are that although most people had not lived near either retention basins or open ditches, there were many concerns about them. This position, plus the fact that a majority favored a land use policy preventing building in wetlands, suggests that such policy approches should be given serious consideration as an alternative to such "open" drainage systems. Additionally, if such a

policy were to be developed at the local, rather than state or federal level, it would be more acceptable.

There are still some questions with which we can deal which focus on predicting environmental policy attitudes. These are examined in a more detailed analysis after the section on public involvement.

Public Involvement

The last several years have seen a substantial increase in citizen participation in natural resource decision making. This has been incorporated in law for many programs. Participation takes many forms, and undoubtedly varies considerably in effectiveness in terms of communicating a point of view. The objective here was to learn something about how citizens see their role with regard to the kinds of issues we have been addressing.

Included in the interview schedule was a list of 18 different types of citizen participation activities. Each respondent was asked to name all of the activities on that list which he or she had done in the last few years to help solve any community problems. The most popular activity among the respondents was voting with 100 percent of the leaders and 65 percent of the nonleaders having done so. Other more popular activities among all (30 percent or more nonleaders saying that they had done a given activity) were: talking to particular persons from daily life (e.g., friends, neighbors and relatives), persuading others to vote for someone or some legislation, talking or writing to elected government or political party officials, joining organizations, attending meetings of organizations and signing petitions.

Respondents also were asked to pick three activities from the list of 18 which were the three most effective ways for a citizen to express his or her opinions (see Table 17). The three activities chosen most often by leaders and rural residents were identical: (1) voting for specific people or legislation, (2) talking or writing to elected government or political party officials and (3) during elections trying to persuade others to vote for someone or some legislation. The urbanites and transitional residents were most likely to choose the first two activities just as the leaders and rural residents did but chose talking to particular persons from daily life as the third most effective way to express their opinions.

Table 17. Percent of leaders and nonleaders who named each citizen participation activity as a most effective way to express his/her opinions

Citizen participation activities	Leaders	Nonleaders			
		Total	Urban	Trans.	Rural
voted for specific people or legislation	61%	42%	43%	31%	58%
try to persuade others to vote a particular way	33	17	14	14	32
contribute money to political party or candidate	20	8	7	10	11
work through a particular party	22	19	22	17	5
talk to particular persons from daily life	30	30	34	28	16
talk or write to elected govt. or pol. party officials	54	48	40	66	58
consult a lawyer use legal means	2	5	4	7	5
help form a group or organization to work on this issue	17	22	23	21	21
contacted press or mass media	4	14	13	10	21
joined an organization, club or group	17	14	11	17	21
attended meetings of organizations	4	9	10	7	5
attended public meetings	11	19	22	17	11
talk or write specialists or experts not in government	4	12	11	17	11
signed petition	4	7	9	3	5
participated in protest demonstration	-	2	1	7	-
contribute money to an organization	2	5	5	3	5

Table 17. (continued)

Citizen participation activities	Leaders	Nonleaders Total	Urban	Trans.	Rural
see or write non-elected administrative officials	11%	6%	4%	7%	11%
wear a button or put sticker on car pro-issue	-	2	3	-	-
other	2	1	-	-	5
(n)	46	139	91	29	19

We thought that perhaps those residents who participated more often might think that much more could be done to help solve environmental problems than those who participated less often. We created a crude measure of participation by giving a point each time a respondent said that he or she recently had done one of the 18 participation activities, a procedure that gives equal weight to each activity. The respondent was asked about all of the 18 activities and thus could get a score from zero to 18. The scores then were collapsed into three categories, low (0 - 4), medium (5 - 9) and high (10+). Despite the crudeness of the measure those who obtained low scores had participated in few activities, and those with high scores had participated in the majority of activities. Respondents had been asked if they thought "anything can be done to help solve these environmental problems" -- problems they themselves had mentioned. We found that overall, the higher the participation score, the more likely the respondent thought much could be done (see Table 18). This was true for both leaders and nonleaders. Almost all of those with high participation scores (10 or higher) felt something or much could be done to solve environmental problems. The majority of leaders who felt there were environmental problems were high participators and felt something or much could be done. The majority of nonleaders participated less and were more evenly split between the possibility of doing little or nothing and something or much to solve environmental problems.

Table 18. Respondent's belief that things could be done to improve environment by participation score.

Can environmental problems be solved	Participation Score 0 - 4	5 - 9	10+
no, nothing	8%	18%	7%
very little	42	18	-
something	42	29	48
much	8	36	45
Total	100%	100%*	100%
(n)	26	28	29

*This column does not add to 100% because of rounding error.

After the various water resources issue questions had been asked, respondents were asked the following:

> Now I'd like to ask a question about how water resources decisions are made. Some people say that ordinary citizens should be involved in making these decisions, while others say that water technology is so complicated that it should be left up to the experts, or to elected officials. In your opinion should citizens be involved in such decisions?

The great majority of respondents, 77 percent, thought citizens should be involved. Rural residents and leaders particularly thought they should be, 90 percent and 85 percent, respectively. Earlier, when we had asked whether there were local environmental problems, we also asked if the respondent was doing anything to help solve the problem. Fourteen percent said they were currently working on solving the problem(s) they had mentioned. Half of those were leaders, who of course make up only about a fourth of the respondents. Nevertheless, while the numbers are not large, this suggests that a fair number of residents are involved in seeking problem solutions, especially in comparison with the very small numbers of community participants indicated in many studies. This substantial belief in public involvement is not a result of extreme political views. Forty-six percent consider themselves middle-of-the-road, 36 percent say they are conservatives, and 12 percent liberals. Only 7 percent described themselves as very liberal or very conservative. This interest in public issues was supported further by how frequently they reported following the accounts of political and governmental

activities in the news media: 57 percent said they followed such events daily or almost every day; 19 percent often, or several times a week; 17 percent occasionally and only 7 percent never or almost never.

These data suggest that respondents believe in public involvement, and that a fair number practice it. They also make an effort to be involved. There may be a social desirability affect here, that is, "people should be involved, so that's what I'll tell the interviewer." Independently from this study, however, a number of local issues in the study area have had substantial public involvement in recent years, which provides some evidence for the validity of these data.

Predictions on Policy Issues and Participation

The first concern here is whether a set of variables have been identified that would predict a person's stand on a given policy issue. It was shown earlier that leaders were very likely to favor a firm policy to prevent building in wetlands, while only about half of the urban and rural residents favored such a policy. The research question is whether a set of variables used in combination can do a more precise job of indicating which persons do or do not favor a particular policy.

To do this we used multiple regression,[2] a statistical technique to find the best possible linear equation to predict each of six policy variables in the study: the seriousness of pollution in Tippecanoe County (hereafter called pollution), how concerned an individual was about retention basins (retention basins), how concerned an individual was about drainage ditches (ditches), whether or not there should be a firm policy to prevent building in wetlands (wetlands), how concerned people were about the loss of farm land due to its conversion to urban uses (farm land), and lastly, whether or not cities should annex surrounding housing developments and rural areas (annexation). These policy variables are treated as the dependent variables in the analysis.

We chose seven potential explanatory or independent variables to include in the step-wise regression. We used the same seven independent variables in each equation hoping that a pattern of variables might emerge helping us to explain environmental attitudes generally. Originally the list of independent variables was larger but we chose to narrow the list by excluding one of each pair of variables that were highly correlated with one another. The seven variables we finally chose to work with were: where a respondent lived, i.e., urban, transitional or rural residency (X_1), whether the respondent had experienced one or more selected water-related problems (X_2), respondent's age (X_3), sex (X_4) and annual income (X_5), how many places outside Tippecanoe County that the respondent had lived for at least one year (X_6) and lastly a measure of how often the respondent talked about political or community issues with his or her relatives, friends or neighbors (X_7). We felt that these independent variables tapped different aspects of a person's social and demographic characteristics. We also felt that these variables would be more accessible and useful to decision makers than variables which tapped more attitudinal dimensions of an individual.

Separate equations were developed for leaders and nonleaders on the assumption that these two groups had different if not contrasting characteristics. Additionally, the two samples were collected differently as noted earlier and it would be inappropriate to combine them here. Table 19 provides the basic information from the step-wise regression for the leader sample and Table 20 summarizes the information for the nonleader sample.

For example, looking at leaders, the number of places lived outside of Tippecanoe County has the highest correlation with the pollution issue, R=.38.

[2] For a more in depth discussion of stepwise multiple regression, see Draper and Smith (1966). For a discussion of the technique as used in the computer program which we employed, see Nie, et al., (1975).

Table 19. Summary of multiple regression for each of six policy variables for leaders.

Policy Variables*	Independent variables*	Beta	Multiple R	R^2	Independent variable significance	Multiple R significance
pollution	X_6	.47	.38	.14	.020	.020
	X_7	.29	.47	.22	.074	.014
	X_3	-.09	.48	.23	.557	.032
	X_2	-.06	.48	.23	.681	.065
	X_5	.07	.48	.23	.669	.113
	X_1	.02	.48	.23	.914	.187
retention basins	X_3	-.23	.26	.07	.112	.112
	X_1	.21	.34	.11	.194	.122
	X_6	.15	.36	.13	.413	.184
	X_5	.05	.37	.13	.750	.301
ditches	X_1	-.34	.32	.10	.050	.050
	X_7	-.06	.33	.11	.649	.135
	X_2	-.07	.34	.11	.674	.248
	X_6	.05	.34	.12	.737	.382
	X_3	.05	.34	.12	.772	.520
	X_5	-.04	.35	.12	.838	.652
wetlands	X_1	.40	.25	.06	.136	.136
	X_5	-.32	.35	.13	.117	.096
	X_7	.39	.48	.23	.037	.028
	X_2	.15	.50	.26	.318	.041
	X_6	.14	.52	.27	.404	.061
	X_3	-.02	.52	.27	.921	.109
farm land	X_5	-.46	.42	.18	.008	.008
	X_6	-.21	.46	.21	.240	.016
	X_7	-.10	.47	.22	.455	.033
	X_1	.07	.48	.23	.644	.065
annexation	X_1	.40	.36	.13	.025	.025
	X_3	-.20	.41	.17	.215	.039
	X_6	-.20	.45	.21	.223	.047
	X_2	.13	.47	.22	.487	.080
	X_7	-.09	.47	.22	.643	.134
	X_5	-.07	.48	.23	.663	.204

*See text for description of variables.

Table 20. Summary of multiple regression for each of six policy variables for nonleaders.

Policy Variables*	Independent variables*	Beta	Multiple R	R^2	Independent variable significance	Multiple R significance
pollution	X_1	.33	.30	.09	.004	.004
	X_2	.28	.41	.17	.004	.000
	X_3	-.11	.43	.18	.228	.000
	X_5	.06	.43	.19	.485	.001
	X_4	.03	.43	.19	.669	.003
	X_7	.04	.43	.19	.727	.005
	X_6	-.03	.44	.19	.813	.011
retention basins	X_5	.24	.27	.07	.010	.010
	X_7	.25	.34	.11	.040	.004
	X_3	.15	.36	.13	.176	.006
	X_4	-.10	.38	.15	.224	.007
	X_2	.08	.39	.15	.465	.013
	X_1	-.02	.39	.15	.837	.025
	X_6	.02	.39	.15	.872	.044
ditches	X_5	.24	.21	.04	.049	.049
	X_4	-.18	.27	.07	.082	.032
	X_3	.11	.30	.09	.191	.036
	X_6	.08	.31	.10	.423	.057
	X_2	-.07	.32	.10	.537	.090
	X_1	-.05	.32	.11	.608	.137
	X_7	-.02	.32	.11	.847	.206
wetlands	X_4	-.20	.15	.02	.145	.145
	X_2	-.11	.17	.03	.438	.258
	X_7	.08	.19	.03	.522	.374
	X_6	-.05	.19	.04	.631	.504
	X_1	-.03	.19	.04	.821	.644
farm land	X_5	-.17	.17	.03	.095	.095
	X_2	.12	.21	.05	.246	.127
	X_1	.08	.23	.05	.465	.200
	X_4	-.06	.23	.05	.622	.301
	X_7	.03	.23	.05	.781	.426
	X_3	.01	.23	.05	.897	.556
annexation	X_2	.15	.17	.03	.104	.104
	X_3	-.11	.20	.04	.296	.156
	X_4	-.06	.21	.05	.487	.242
	X_6	.05	.22	.05	.638	.356
	X_5	-.02	.22	.05	.850	.493
	X_1	-.01	.22	.05	.915	.624

However, R^2 indicates that only 14 percent of the variance in pollution is explained by number of places lived. Talking about community and political issues had the strongest relationship to pollution of the remaining variables, and therefore entered the regression equation second. It increased R to .47 and R^2 to .22. Thus, these two independent variables explain less than one fourth of the variance in leaders' perception of the seriousness of pollution. The other four independent variables add very little to this, and can essentially be ignored. We will ignore the two columns that show statistical significance for leaders since they are essentially a population rather than a sample. They are included recognizing that some readers may find them useful, interpreting the data "as if" it were a sample. Beta is the unstandardized regression coefficient, and shows the amount of change in the dependent variable that would occur for each unit of change in the independent variable. If we were to write a regression equation for predicting perceived seriousness of pollution, we would include only the first two independent variables; however, R^2 would be relatively low (by absolute standards, although not particularly low in comparison with many sociological research findings) and consequently there would be considerable error associated with the predictions.

This analytic approach is used to determine the relationship of the independent variables to each of the policy issues for both leaders and nonleaders. With nonleaders, however, statistical significance is considered since a probability sample was used to select cases. We will not go through the tables in detail since our objective is to show the general patterns in the tables.

The tables for leaders and nonleaders show first that the amount of variance explained in the policy variables by any one equation is quite small. Secondly, the tables show that there is no pattern to the order in which the independent variables entered the regression equations to explain the policy variables. There are several possible explanations for this. First, one or more variables used in the analyses may not be valid measures, i.e., they may not measure what they are supposed to measure. This may be especially true of the dependent variables. The questions asked to measure the dependent variables are more complex than most of the questions for the independent variables. The respondents may not have understood them adequately, thus causing some measurement error. A second possible problem is the distribution of scores on the dependent and independent variables may not have been enough to capture significant differences among respondents. This may be especially true for the leader sample which was a more homogenous group than the nonleader sample. However, this was not particularly characteristic of the nonleader sample and there the relationships are small and the variable order differs from one policy variable to another. Third, the basic assumption of multiple regression that the relationships between the dependent and independent variables be linear may not have been met. To check this we looked at scattergrams showing the relationship between pairs of the dependent and independent variables. We did not see any moderate or strong curvilinear relationships.

Even if we could rule out the methodological problems, there is the chance that the independent variables are substantively poor predictors of the chosen dependent variables. We may not have tapped the right dimensions of a person's social and demographic makeup.

For example, none of the independent variables measured any personality factors nor were any attitude and belief scales included.

Thus there are several alternative explanations for the low explanatory power of the regression equations and for the lack of a pattern of independent variables across the dependent variables.

We also used stepwise multiple regression in order to try to explain who participates most often. The importance of this analysis stems from the frequent finding that certain groups participate more extensively than others in activities that are intended to affect policy outcomes. Our measure of participation for each respondent was the number of participation activities on the list of 18 which the respondent said he or she had done. We chose ten independent variables to comprise our initial

predictor list. They were: the residential location of each respondent, i.e., whether they live in urban, transitional or rural areas, (X_{11}); whether the respondent is a leader or nonleader (X_{12}); the age (X_{13}), sex (X_{14}) and annual income (X_{15}) of the respondent; the number of places outside Tippecanoe County where the respondent lived for more than one year (X_{16}); how often (never, occasionally, often, daily) the respondent followed accounts of political and governmental activities in the news media (X_{17}); how concerned about community problems is a respondent (X_{18}), (this variable was created by summing the number of community problems--environmental quality, poverty and educational problems--a respondent said he or she was "somewhat" or "very" concerned about); whether the respondent was employed at a full-time job or not (X_{19}); and, finally, whether a respondent was very liberal, liberal, middle-of-the-road, conservative or very conservative (X_{20}).

Table 21 presents the results of the multiple regression of participation on the selected independent variables over all respondents. If we were to use the criterion that individual variable significance be less than .05 when it enters the equation, we find that the first four variables to enter the equation meet this criterion. Thus, respondents who have higher participation scores than other respondents are likely to be leaders rather than nonleaders, have higher incomes than other respondents, to follow accounts of political and governmental activities in the news media more often and express concern for a variety of community issues. These four variables (X_2, X_5, X_7, X_8) alone explain about 50 percent of the variance in the participation scores. The other variables add little to this.

Table 22 presents a summary of the regression of the participation variable on nine of the independent variables. The variable measuring whether a respondent is a leader or nonleader is excluded because we only are looking at nonleaders in this table. Using the criterion mentioned earlier that the independent variable significance be less than or equal to .05 in order for a variable to be considered as making a statistically significant contribution to the multiple regression equation, we find that the first three variables to enter the regression equation meet this criterion. It appears that the higher the participation scores, the more likely a nonleader has a higher income than the other respondents, follows accounts of political and governmental activities in the news media more often than the other respondents and expresses some or much concern more often for a variety of community problems. These three variables (X_5, X_7, X_8) explain twenty-eight percent of the variance in the participation scores.

Table 21. Summary of multiple regression of participation on ten independent variables for all respondents.

Independent variables*	Beta	Multiple R	R^2	Independent variable significance	Multiple R significance
X_{12}	.30	.59	.35	.000	.000
X_{15}	.27	.66	.43	.000	.000
X_{17}	.19	.69	.47	.001	.000
X_{18}	.17	.71	.50	.006	.000
X_{11}	-.11	.71	.51	.071	.000
X_{13}	-.09	.72	.51	.310	.000
X_{19}	.08	.72	.52	.295	.000
X_{14}	.08	.72	.52	.297	.000
X_{16}	.06	.72	.52	.328	.000
X_{20}	-.07	.72	.52	.906	.000

*See text for complete description of variables.

Table 22. Summary table of multiple regression of participation on nine independent variables for nonleaders only.

Independent variables*	Beta	Multiple R	R^2	Independent variable significance	Multiple R significance
X_{15}	.30	.42	.18	.000	.000
X_{17}	.22	.49	.24	.003	.000
X_{18}	.19	.53	.28	.020	.000
X_{16}	.16	.54	.29	.156	.000
X_{13}	-.15	.55	.31	.113	.000
X_{14}	.19	.57	.32	.140	.000
X_{19}	.15	.58	.34	.118	.000
X_{11}	-.11	.59	.35	.182	.000
X_{20}	.04	.59	.35	.604	.000

*See text for complete description of variables.

Table 23 presents the same sort of summary information but for leaders only. If the criterion that the individual variable significance be less than .05 in order for a variable to be considered as making a statistically significant contribution to the regression equation we find that no variables enter statistically significantly. As with the policy variables, we choose to ignore this criterion for leaders since they are essentially a population rather than a sample. The lack of significance is in part attributable to the smaller number of cases among leaders. Therefore, it is worthy of note that the first two variables to enter the equation were how often the leader followed accounts of political and governmental activities in the news media and expressed concern for social issues. Income did not enter the equations again apparently because of its low variance among leaders.

Table 23. Summary table of the multiple regression of participation on nine independent variables for leaders only.

Independent variables*	Beta	Multiple R	R^2	Independent variable significance	Multiple R significance
X_{17}	.29	.26	.07	.100	.100
X_{18}	.39	.35	.12	.138	.086
X_{20}	-.28	.41	.17	.172	.081
X_{11}	-.10	.44	.20	.245	.090
X_{13}	.21	.46	.21	.366	.117
X_{19}	-.16	.48	.23	.409	.152
X_{16}	-.47	.48	.23	.769	.228

*See text for complete description of variables.

These data show a consistent pattern in which leaders, higher income persons, those who follow news media accounts of governmental activities and who are concerned about more community issues participate more than others in a variety of activities from voting to signing petitions in order to influence the outcome of political events. It is these people who participate more whose views often are more likely to be taken into account in policy decision making. As shown earlier in the discussion on policy issues, the views of leaders and nonleaders (the most important of these variables for predicting participation) were often similar. This was generally true with regard to water pollution, preserving parts of the countryside and concern about drainage systems. However, on other issues such as concern about loss of farm land, conserving prime farm land, annexation, responsibility for drainage and a firm wetlands policy differences were greater between leaders and nonleaders, and in some cases they were substantial.

The views of those who participate less are less likely to be obtained through the usual participation processes. If their views are to be considered in formulating public policy, it appears that techniques which deliberately seek them out, such as the survey method does, would need to be used.

Summary and Conclusions

An important aspect of learning what knowledge and attitudes people have about a topic is how we ask questions. In a profound sense, our questions tell the listener what we are interested in knowing about. They are a stimulus for an answer. The implications of this can be seen in three questions of increasing specificity in this study. (1) What would you say is the most serious problem facing this community right now? (2) Do you think there are any problems with the environment in this area, now or in the last few years? (3) We hear a good deal of talk about the problem of pollution in the United States, including water pollution. How serious do you think water pollution is in Tippecanoe County? The data show that the more specific the question, the higher the percentage who think there is a problem, at least to some degree.

Which is the right answer? How serious do people think (water) pollution is? The answer will not be a constant, now and forever. It will vary with the structure of the question, and the information people have on levels of pollution. An approach for

the researcher or the planner is to seek data about the issue in multiple ways. For example, different but related questions can be asked, as above. Questions (2) and (3) were much more alike in their responses than they were compared to question (1) which was very unstructured and very open-ended. Open-ended questions that allow respondents to describe their attitude in more detail can also be very valuable. It seems reasonable to conclude here that there is a moderate degree of concern with the environment, and water pollution in particular, in the study area based on these data.

Part of the objective for these data was to compare leaders and the general public on how they saw selected water policy issues. On many questions the differences were small. However, the importance of such comparisons is accentuated by findings that might not be expected. Leaders were somewhat more likely to identify themselves as conservatives politically, and yet their position, collectively, was less conservative than the general public on two issues: (1) they were willing to pay more in tax dollars to combat water pollution, and (2) they were more in favor of a firm policy to prevent building in wetlands. As an additional illustration of such sub-group comparisons, it was the rural and urban residents who were least favorable to such a wetlands policy, with transitional area residents much more in favor of such a policy.

The importance residents place on local government as opposed to state or federal government is seen in several ways. They disagreed strongly that water pollution is the federal government's problem. They felt it is local government and developers who are responsible for seeing that adequate drainage exists. And when asked who is responsible for decisions about water prices and quality, they were much more likely to name some local entity rather than a state agency.

The final point is about the relationship of experience to a feeling of concern. It was not necessary for respondents to have direct experience with either retention basins or open ditches to have concern about them. The use of open-ended questions in combination with structured questions provided useful data here. This indicated the kinds of concerns people had, including the need for careful design and construction, plus maintenance, in addition to mosquitoes and safety. Proposals for use of these types of drainage systems could take these factors into account, and recognize whatever additional costs and problems might be involved to satisfy these concerns. The strong belief in citizen participation expressed by these respondents suggests a potential for their involvement in such decisions. This might be deliberately sought in the very early stages of planning, or it could be omitted to await their reactions to plans already developed.

The analysis of differences in positions on the policy issues up to this point considered leadership and place of residence primarily, and socioeconomic status to some extent. Are additional variables that describe a person's social structural position in a community useful for estimating his/her position on these policy issues? To answer this question, seven independent variables (location of residence, experience with water problems, age, sex, income, number of places lived outside of Tippecanoe County, and how frequently they talked about political and community issues) were used. The method was a step-wise multiple regression, done separately for leaders and for nonleaders and for each of six policy variables. The results of this analysis showed that these particular independent variables did not account for a large portion of the variance in any of the policy variables, and that there was no predominant pattern among these variables in the order in which they entered the regression equation.

Another important part of the policy decision making process is who participates in it. Those people who participate little or not at all in the activities listed in Table 17 are likely to have little impact on policy decisions. Again, step-wise multiple regression was used. This showed that leaders, those with higher incomes, who follow news media accounts of governmental activities and are more concerned about community issues participate more.

In conclusion, this study illustrates some important points about the use of survey research in urban water resources policy studies. It showed

that the general, open-ended "most important community problem" type of question produced fewer indications of concern with water resources issues than more specific questions. The more detailed questions provided more specific information about which issues people were and were not concerned about. Additionally, leadership and place of residence provided information on who expressed concern with which issues. However, the more detailed regression analysis did not show any consistent pattern among a set of variables as predictors of position on six policy issues. A number of possible reasons for this are given earlier. Regardless, it seems to indicate that there is no simple set pattern of response across issues by leaders, or urban, transitional or rural area residents on these issues. In contrast, there is a quite distinct pattern to political participation, which is positively related to leadership, income, attention to news media, and concern for community issues. Given these findings, the social survey appears to be a useful means of determining the extent to which there is consensus or lack of consensus on issues, and can be an especially useful source of information to policy makers when the views of the more active members of a community differ from those of less active members.

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INTERVIEW SCHEDULE FOR COMMUNITY PERCEPTIONS, PARTICIPATION AND QUALITY OF LIFE STUDY

Department of Sociology and Anthropology

Purdue University
1978

Hello, I'm _____. I am part of a group from Purdue University that is talking to people in the Lafayette area about some of the problems confronting us today, both here and in many other communities.

(IF RESPONDENT MAY BE UNDER 18: Right now we're only interviewing those 18 and over. Is there anyone 18 or older here? CONTINUE, GO BACK TO "HELLO," OR INDICATE D.U. INELIGIBLE.)

We are interested in knowing how you feel about some of the issues affecting this community. Decisions are being made everyday on these kinds of issues that affect our lives in many ways. We'd also like to know what you think about some national problems. Of course, your participation is voluntary. Everything you say is confidential, and your name will not be used in the study.

(LEADERS: It is important to know how you, as a person in a position of leadership, feel about these issues.)

(SAMPLE: It is important that we talk to you because you have been selected as part of a scientific sample of county residents.)

I have identification if you want to see it. Do you have a few minutes to answer some questions?

Address: _____ Block No. _____

(Record of unsuccessful calls:)

(Date and Time)	(Reason)	(Next Step)

1st Alt. Address: _____ Block No. _____

(Record of unsuccessful calls:)

(Date and Time)	(Reason)	(Next Step)

Time interview begins: _____ a.m.; p.m. Date of interview: _____

Case no. 1 2 3

Card no. 4

Block no. 5 6

1. How long have you lived in Tippecanoe County? ____years — 7 8

2. How long have you lived in this neighborhood? ____years — 9 10

3. How many places outside of Tippecanoe County have you lived for at least one year? ____number of places (REFERS TO CITIES OR SPECIFIC RURAL AREAS, NOT TO HOUSES) — 11 12

4. What would you say is the most serious problem facing this community right now?

_____ 13 14

_____

Now I would like to ask you some questions about schools in this area, that is, schools at the elementary, junior high and high school levels.

5. Do you think that there are any problems with schools or with the quality of education the schools provide, now or in the last few years? (Would you say...) 15

___ 3 yes, many
___ 2 yes, some
___ 1 yes, but only a few
___ 0 no, none
___ 9 don't know, not sure —(GO TO QUESTION 14)

6. What are these problems? (BRIEFLY LIST PROBLEMS)

_____ 16 17
_____ 18 19

7. How concerned are you with these educational problems? 20

___ 4 very concerned
___ 3 somewhat concerned
___ 2 not particularly concerned nor unconcerned
___ 1 generally or usually unconcerned
___ 0 not concerned at all
___ 9 don't know, not sure —(GO TO QUESTION 9)

8. Are there particular reasons why you are concerned with these educational problems?

_____ 21 22
_____ 23 24

9. What do you think is the cause of these educational problems?

_____ 25 26
_____ 27 28

10. Do you think anything can be done to help solve these problems? 29

___ 3 yes, much
___ 2 yes, somethings
___ 1 yes, but very little
___ 0 no, nothing
___ 9 don't know, not sure —(GO TO QUESTION 14)

11. Have you personally done anything to help solve these educational problems?

_____ 30 31
_____ 32 33

12. Are you currently doing anything on these problems, or have you stopped trying to help solve them? 34

___ 1 currently working on them (GO TO QUESTION 14)
___ 0 stopped working on them

13. Why did you stop trying to solve these educational problems?

_____ 35 36
_____ 37 38

14. Which of the following three statements comes closest to representing your feelings on how the schools can best be improved? (HAND CARD)

____1. In order to improve our schools the attitudes and values of some of the students need to be changed. (For example, this might be accomplished by providing slower or more troublesome students with special instruction on how to learn and behave in school.) 39

____2. In order to improve our schools the latest technology and equipment should be used in the teaching process. (For example, educational equipment that advanced technology has produced, such as computers, teaching machines and hand calculators, should be introduced as soon as they become available.)

____3. In order to improve our schools we should pass legislation that would greatly change the way we run our schools. (For example, this could be done by legislating educational policies that take into consideration the different backgrounds and needs of all students, recognizing that it is the way we teach and not the students themselves, that must be changed most importantly.)

We now would like to get your opinions about the environment, particularly the quality of air and water.

15. Do you think there are any problems with the environment in this area, now or in the last few years? (Would you say...)

____ 3 yes, many 40
____ 2 yes, some
____ 1 yes, but only a few
____ 0 no, none
____ 9 don't know, not sure —(GO TO QUESTION 24)

16. What are these problems? (BRIEFLY LIST PROBLEMS)

_____ 41 42
_____ 43 44

17. How concerned are you about the quality of the environment in this area?

____ 4 very concerned 45
____ 3 somewhat concerned
____ 2 not particularly concerned nor unconcerned
____ 1 somewhat unconcerned —(GO TO QUESTION 19)
____ 0 not concerned at all
____ 9 don't know, not sure

18. Are there particular reasons why you are concerned about these environmental problems in this area?

_____ 46 47
_____ 48 49

19. What do you think is the cause of these environmental problems?

_____ 50 51
_____ 52 53

20. Do you think anything can be done to help solve these problems?

____ 3 yes, much 54
____ 2 yes, somethings
____ 1 yes, but very little
____ 0 no, nothing
____ 9 don't know, not sure —(GO TO QUESTION 24)

21. Have you personally done anything to help solve these environmental problems?

_____ 35 36

_____ 37 38

22. Are you currently doing anything on these problems, or have you stopped trying to help solve them?

____ 1 currently working on them (GO TO QUESTION 24) 39

____ 0 stopped working on them

23. Why did you stop trying to solve these environmental problems?

_____ 60 61

_____ 62 63

24. Which of the following three statements comes the closest to representing your view on how environmental problems could be handled?(HAND CARD)

____1. In order to improve environmental conditions an increase in technological know-how should be encouraged. (For example, this would reduce pollution through improved pollution control equipment and techniques.) 64

____2. In order to improve environmental conditions we should pass strong environmental legislation that requires all of us to stop any behavior that harms the environment. (For example, such legislation could change our national priorities from an emphasis on economic growth to an emphasis on environmental quality.)

____3. In order to improve environmental conditions people's attitudes and values about the environment need to change. (For example, people could be given information explaining what they personally can do to improve the environment.)

Now we would like to ask you some questions about poverty in this area.

25. Do you think there are any problems with poverty in this area, either now or in the last few years? (Would you say...)

____ 3 yes, many 65

____ 2 yes, some

____ 1 yes, but only a few

____ 0 no, none ——(GO TO QUESTION 34)

____ 9 don't know, not sure ——(GO TO QUESTION 34)

26. What are these problems? (BRIEFLY LIST PROBLEMS)

_____ 66 67

_____ 68 69

27. How concerned are you with these poverty problems?

____ 4 very concerned 70

____ 3 somewhat concerned

____ 2 not particularly concerned nor unconcerned

____ 1 somewhat unconcerned ——(GO TO QUESTION 29)

____ 0 not concerned at all

____ 9 don't know, not sure ——(GO TO QUESTION 29)

28. Are there particular reasons why you are concerned with these poverty problems?

_____ 71 72

_____

28. Are there particular reasons why you are concerned with these poverty problems?

_____ 71 72

_____ 73 74

Case no. 1 2 3

Card no. 4

29. What do you think is the cause of these poverty problems?

_____ 5 6

_____ 7 8

30. Do you think you could do anything to help solve these problems?

____ 3 yes, much

____ 2 yes, some

____ 1 yes, but very little

____ 0 no, nothing

____ 9 don't know, not sure —(GO TO QUESTION 34)

9

31. Have you personally done anything to help solve these poverty problems?

_____ 10 11

_____ 12 13

32. Are you currently doing anything on these problems, or have you stopped trying to help solve them?

____ 1 currently working on them (GO TO QUESTION 34)

____ 0 stopped working on them

14

33. Why did you stop trying to solve these poverty problems?

_____ 15 16

_____ 17 18

34. Which of the following three statements comes closest to representing your feelings on how poverty could be eliminated? (HAND CARD)

19

____1. In order to reduce poverty we should encourage technological advancements which would lead to a better standard of living for all. (For example, this could provide better health care, better transportation, etc., which would significantly improve the lives of the poor.)

____2. In order to reduce poverty we should legislate antipoverty policies that would require changes in everyone's behavior, not just the poor. (For example, laws could make the distribution of wealth more equal among all, and at the same time remove the discriminatin[illegible] barriers that have prevented the poor from getting their full share of opportunities and financial rewards.)

____3. In order to reduce poverty we should change the attitudes and values of the poor themselves. (For example, they could be encouraged to accept more responsibility for their lives, perhaps through job training which leads to employment.)

Here is a list of things different people do to solve community problems. (HAND LIST)

35. At any time in the last few years have you done any of these things to help solve any community problems? (Some of these you may have mentioned, others may have slipped your mind or you may not have done.)

___ 1 voted for specific people or legislation 20

___ 2 during elections tried to persuade others to vote for someone or some legislation 21

___ 3 contributed money to a political party or candidate because of their stance on an issue 22

___ 4 worked through a political party, i.e., for the election of a political candidate 23

___ 5 talked to particular persons from daily life--friends, neighbors, relatives, fellow workers, priest, etc. 24

___ 6 talked or wrote to elected government or political party officials (your representative, a party leader, govt. agency) 25

___ 7 consulted a lawyer--used legal means 26

___ 8 helped form a group or organization to work on this issue 27

___ 9 contacted press or mass media 28

___ 10 joined an organization, club or group 29

___ 11 attended meetings of organizations 30

___ 12 attended public meetings 31

___ 13 talked to or wrote to particular specialists or experts not in government or political party 32

___ 14 signed petition 33

___ 15 participated in a protest demonstration 34

___ 16 contributed money to a particular organization (other than a political party) 35

___ 17 gone to see, spoke to or wrote to non-elected administrative officials or agency technical personnel 36

___ 18 wore a button or put a sticker on the car showing your support of one side of this issue 37

___ 19 anything else?: _____ 38

36. Which of the things on that list are the most effective ways for a citizen to express his or her opinions, say the three most effective ways?

___ (number from question 35) 39 40

___ " " " 41 42

___ " " " 43 44

Now I'd like to ask you a few questions about water. Some of the answers you may know, others you may not. In any case, please answer as specifically as you can.

37. First, where does your drinking water (at home) come from? (SPECIFIC ANSWER) (IF "OWN WELL" GO TO QUESTION 41) _____ 45

38. What is the name of the water company in your area? _____

_____ 46

39. Who is responsible for making decisions concerning the price of water in your community?

_____ 47

40. Sometimes the water from your tap may have a brownish color to it. Do you know why this happens? _____ 48

41. Who is responsible for making decisions concerning the quality of water, that is checking to see that it is safe to drink? _____ 49

42. Where is your household's sewage treated? _____ 50

43. Has your basement or house ever been flooded or wet after a rain, in your present house (apartment) or elsewhere that you have lived?

___ 2 yes
___ 1 uncertain
___ 0 no

51

44. Have your drain or sewer pipes ever "backed-up" and allowed water or sewage to enter your house or elsewhere?

___ 2 yes
___ 1 uncertain
___ 0 no

52

45. Is your water pressure ever too low to take a bath or shower, water your lawn or for other home uses?

___ 2 yes
___ 1 uncertain
___ 0 no

53

46. Has your water ever been cut off because of supply problem, such as a broken water main? (not because of a bill payment problem.)

___ 2 yes
___ 1 uncertain
___ 0 no

54

47. There has been concern in some cities about the quality of drinking water, but not in others. Have you ever been concerned about the quality of your drinking water here?

___ 2 yes
___ 1 uncertain
___ 0 no

55

48. We hear a good deal of talk about the problem of pollution in the United States, including water pollution. How serious do you think water pollution is in Tippecanoe County?

___ 4 very serious
___ 3 serious
___ 2 somewhat serious
___ 1 not very serious
___ 0 not serious at all
___ 9 don't know

56

49. Some laws have recently been passed, both on the state and federal levels, to protect us against water pollution. In the next five years do you see the problem of water pollution getting better or worse?

___ 5 significantly worse
___ 4 somewhat worse
___ 3 stay about the same
___ 2 somewhat better
___ 1 significantly better
___ 9 don't know

57

50. Considering how you feel about water pollution, do you think the amount being done to control it is about right, too much or too little?

____ 1 too much
____ 2 about right
____ 3 too little
____ 9 don't know, not sure

58

51. Some people say that water pollution is the federal government's problem. Do you agree with this?

____ 3 agree
____ 2 uncertain
____ 1 disagree

59

52. Would you be willing to pay more in taxes if the increase would effectively combat water pollution?

____ 1 yes
____ 0 no (GO TO QUESTION 54)
____ 9 don't know (GO TO QUESTION 54)

60

53. How much more would you be willing to pay?

____ 1. $1. more a year or less
____ 2. $2. to $5. more a year
____ 3. $6. to $10. more a year
____ 4. $11. to $25. more a year
____ 5. $26. to $99. more a year
____ 6. $100. or more a year
____ 9. don't know

61

54. After a heavy rain are there places around here (in this neighborhood) where water stands for some time before it drains away?

____ 0 no
____ yes, IF YES ASK: Would you say that this is a serious problem, a minor problem or not a problem for people in this area?

____ 3 serious problem
____ 2 minor problem
____ 1 not a problem

62

55. When very heavy rains occur in urban areas there is often flooding in streets or peoples' yards. There are a number of ways that this run-off water can be controlled or moved out of the area. The usual way in cities is through under-ground pipes. Additional ways include retention basins and open ditches.

Have you ever lived in an area where retention basins were used?

____ 0 no (Retention basins are usually low, grassy areas which hold water for a few hours after a fairly heavy rain, and then dry out as the water drains away.)
____ 1 yes
____ 9 don't know

63

56. Do you know anything about them? Do they work alright, or are there problems with them for people living near them?

_____ 64 65
_____ 66 67

57. Have you ever lived in an area where open ditches were used for drainage?

___ 0 no
___ 1 yes
___ 9 don't know

68

58. Do you know anything about them? Do they work alright, or are there problems with them for people living near them?

_____ 69 70
_____ 71 72

Case no. 1 2 3

Card no. 4

59. How would you feel about living near a retention basin?

___ 0 no particular concern or objection
___ 1 a little concerned
___ 2 quite or very concerned — (IF CONCERNED ASK) Why would you be concerned?

5

_____ 6 7
_____ 8 9

___ 9 don't know

60. How would you feel about living near an open drainage ditch?

___ 0 no particular concern or objection
___ 1 a little concerned
___ 2 quite or very concerned — (IF CONCERNED ASK) Why would you be concerned?

10

_____ 11 12
_____ 13 14

___ 9 don't know

61. Who should be responsible for seeing that adequate drainage exists in an area, individual property owners, the developer, local, state or federal government? (CHECK ALL THAT APPLY)

___ 1 Individual property owners
___ 2 The developer (who originally develops the land)
___ 3 Local government
___ 4 State government
___ 5 Federal government

15
16
17
18
19

62. One way to deal with this problem is to have a firm policy to prevent people from building in wetlands -- areas that are low or poorly drained, and frequently have water standing in them. Would you be in favor of or opposed to such a firm land use policy?

___ 1 very opposed
___ 2 somewhat opposed — Why is that? _____

21 22
23 24

___ 3 uncertain
___ 4 somewhat in favor
___ 5 very in favor — Why is that? _____

25 26
27 28

Now I'd like to ask you some questions about the effects of continued population growth in Tippecanoe County.

63. As you know, many areas of farm land are converted to urban uses such as businesses, industries and homes every year. How do you feel about this loss of farm land? (Would you say you are very concerned, mildly concerned, or not concerned?)

____ 2 very concerned
____ 1 mildly concerned
____ 0 not concerned
____ 9 no opinion

29

64. Do you see a need for exploring or developing ways of preserving prime farm land in Indiana?

____ 2 yes
____ 1 undecided
____ 0 no

30

65. Do you see a need for parts of the countryside in Tippecanoe County to be kept in a natural state for future generations to appreciate and use?

____ 2 yes
____ 1 undecided
____ 0 no

31

66. One way for cities to grow is by annexation of surrounding housing developments and rural areas. Do you feel these areas should be brought into the city or not?

____ 1. yes, definitely under any circumstances
____ 2. yes, but only if people outside the city want to be annexed
____ 3. it would depend on circumstances
____ 4. no, people should live in the area of their choice
____ 5. no, not under any circumstances; the city is large enough
____ 9. don't know, not sure

32

67. Growth and jobs often mean new industry in a community. Sometimes this may also mean some air or water pollution. Would you be in favor of allowing an industry to build a factory which would bring new jobs into the county, but which would cause some pollution at the same time?

____ 1. yes, under any circumstances
____ 2. yes, unless the pollution is (very) serious
____ 3. it would depend on circumstances (number of jobs, amount of pollution)
____ 4. no, unless the jobs were (very) essential
____ 5. no, not under any circumstances
____ 9. don't know

33

68. Do you think land should be zoned for the purpose of preserving natural scenic beauty?

____ 2 yes
____ 1 undecided
____ 0 no

34

69. People have different ideas about what makes an area scenic or attractive. Which three of these land uses do you think are most scenic? (HAND CARD)

___ 1. agricultural — 35
___ 2. commercial — 36
___ 3. educational — 37
___ 4. flood plain — 38
___ 5. industrial — 39
___ 6. pasture — 40
___ 7. recreational — 41
___ 8. residential — 42

70. About how many families are you related to in this area, including in-laws? ___number of families (IF NONE, GO TO QUESTION 72; area refers to community) — 43 44

71. About how often do you visit with these relatives (and in-laws)?

___ 5 daily — 45
___ 4 once a week or more
___ 3 several times a month
___ 2 several times a year
___ 1 once or twice a year
___ 0 never, or rarely (less than once a year)

72. About how many families in this neighborhood, who are not relatives or in-laws, are you friends with?

___ number of families (IF NONE, GO TO QUESTION 74) — 46 47

73. About how often would you say you get together with these neighbors, say for coffee or for the evening?

___ 5 daily — 48
___ 4 once a week or more
___ 3 several times a month
___ 2 several times a year
___ 1 once or twice a year
___ 0 never, or rarely (less than once a year)

74. About how many friends do you have in this area, who are not relatives or neighbors? (Area refers to community)

___ number of friends (IF NONE, GO TO QUESTION 76) — 49

75. How often would you say you get together with these friends?

___ 5 daily — 50
___ 4 once a week or more
___ 3 several times a month
___ 2 several times a year
___ 1 once or twice a year
___ 0 never, or rarely (less than once a year)

(IF NO RELATIVES, NEIGHBOR/FRIENDS OR FRIENDS, GO TO QUESTION 77)

76. How often would you say you talk about political or community issues with your relatives, neighbors and friends?

____ 3 most of the time
____ 2 about half of the time, often
____ 1 once in a while
____ 0 never, or rarely

51

77. How many groups, clubs and organizations do you belong to? We are thinking of organizations like school groups, church groups, lodges, interest groups, unions, civic or farm groups, educational, occupational or professional groups, etc.

____ number of organizations

52 53

78. How many of these organizations take stands on political and community issues?

____ number of organizations that take stands

54 55

79. In politics, as of today, do you consider yourself a:

____ 1. Republican (IF REPUBLICAN) .....Would you consider yourself as:
____ 2. Democrat (IF DEMOCRAT) .....
____ 3. Independent (IF INDEPENDENT) .....
____ 4. Other; specify: _____

____ 7 a strong Republican
____ 6 not very strong

56

..Would you consider yourself as:

57

____ 5 a strong Democrat
____ 4 not very strong

.....Would you consider yourself as:

____ 3 closer to the Republican party
____ 2 closer to the Democratic party
____ 1 not close to either
____ 0 non-political

80. Today would you describe your political views as:

____ 1. very conservative
____ 2. conservative
____ 3. middle-of-the-road
____ 4. liberal
____ 5. very liberal

58

Here are four statements we hear sometimes about how people feel about government. Would you tell me whether you agree or disagree with each of them?

81. Sometimes politics and government seem so complicated that a person like me can't really understand what's going on. Do you agree or disagree?

____ 1 agree
____ 0 disagree

59

82. I don't think public officials care much what people like me think. Do you agree or disagree?

____ 1 agree
____ 0 disagree

60

83. People like me don't have any say about what the government does. Do you agree or disagree?

____ 1 agree
____ 0 disagree

61

84. So many other people vote in the national elections that it doesn't matter much to me whether I vote or not. Do you agree or disagree?

____ 1 agree
____ 0 disagree

62

85. Do you follow the accounts of political and governmental activities in the news media (newspaper, television, radio and news magazines)?

____ 3 Daily or almost every day
____ 2 Often, several times each week
____ 1 Occasionally (1 to 4 times a month)
____ 0 Never or almost never

63

86. Did you vote in the last election?

____ 1 yes
____ 0 no

64

87. Now I'd like to ask a question about how water resources decisions are made. Some people say that ordinary citizens should be involved in making these decisions, while others say that water technology is so complicated that it should be left up to the experts, or to elected officials. In your opinion should citizens be involved in such decisions? (Examples: major expansion of water or sewer facilities, or rates to consumers.)

____ 2 yes, citizens should be involved
____ 1 undecided
____ 0 no

65

88. Who are the community leaders who make the most important decisions around here? (Do you know his/her name?)

_____ _____
_____ _____
_____ _____
_____ _____

66 67

89. Which statement more nearly describes the way things are in Tippecanoe County? (HAND CARD)

A. Almost all important decisions are made by a small group of people. These few leaders usually take the initiative in starting projects; they almost always stop any project they oppose. Members of this group frequently get together informally to discuss their plans. Their influence is dominant over nearly all community affairs, regardless of the subject. They seldom find it necessary to concern themselves much with the opinions of other individuals or groups of individuals. In short, Tippecanoe County is pretty much run by a small group of persons with a great deal of influence.

68

B. Almost all important decisions are made by a process of give and take among a large number of groups and individuals. On one issue one combination of interested people will develop; an entirely different group of people will become interested on another. Many different people bring up important issues for consideration; there is no group which stops nearly every project. Leaders find it necessary to pay close attention to what most people are thinking in the community. In short, Tippecanoe County is pretty much run by constantly changing alliances in which many individuals and groups play parts.

____ 1. Tippecanoe County is much more like A than B
____ 2. Tippecanoe County is somewhat more like A than B
____ 3. Tippecanoe County is slightly more like A than B
____ 4. Tippecanoe County is slightly more like B than A
____ 5. Tippecanoe County is somewhat more like B than A
____ 6. Tippecanoe County is much more like B than A

90. What was your age on your last birthday? ___years

69 70

91. How many years of education have you completed? ___years

71 72

92. Are you married? (What is your marital status?)

___ 1. married
___ 2. single
___ 3. divorced
___ 4. separated
___ 5. widowed
___ 6. other: specify _____

73

93. What are the ages of the other persons living in your household?

___, ___, ___, ___, ___, ___, ___, ___, ___, ___, ___,

74 75

94. (IF ANY PERSONS ARE AGES 5 to 18, ASK) Are the children in public schools or in private schools?

___ 1. public schools
___ 2. private schools
___ 3. both
___ 4. not in school

76

Case no. 1 2 3

Card no. 4

95. Are you currently employed? (Are you a...student...homemaker...retired?)

___ 1. employed (IF PART-TIME, ASK:) How many hours a week do you work ___hours per week
___ 2. unemployed
___ 3. retired
___ 4. disabled
___ 5. student
___ 6. homemaker
___ 7. other: specify _____

5

(GO TO QUESTION 97)

96. What is your occupation? (NOT WHERE WORK: What do you do; what is your job called?)

_____

6 7

97. (IF MARRIED, ASK) Is your wife/husband currently employed?

___ 1. employed (IF PART-TIME, ASK:) How many hours a week does he/she work? ___hours per week
___ 2. unemployed
___ 3. retired
___ 4. disabled
___ 5. student
___ 6. homemaker
___ 7. other: specify _____

8

(GO TO QUESTION 99)

98. What is her/his occupation? (NOT WHERE WORK: What does he/she do; what is her/his job called?

_____

9 10

99. Would you please indicate, using the letter on this card (HAND CARD), what your total family income was in 1977, before taxes?

a___1. under $2,000
b___2. $2,000 to $3,999
c___3. $4,000 to $5,999
d___4. $6,000 to $7,999
e___5. $8,000 to $9,999
f___6. $10,000 to $14,999
g___7. $15,000 to $19,999
h___8. $20,000 to $24,999
i___9. $25,000 to $29,999
j___10. $30,000 to $49,999
k___11. $50,000 and over

11 12

THANK RESPONDENT

(OBSERVE: It is not necessary to ask these questions.)

100. Sex of respondent

____ 1. Female
____ 2. Male

13

101. Race of respondent

____ 1. Black
____ 2. Oriental
____ 3. White
____ 4. Other: specify: _____

14

Time of completion of interview _____a.m.; p.m.

Length of interview _____minutes

1. less than 20 minutes
2. 20 to 29 minutes
3. 30 to 39 minutes
4. 40 to 49 minutes
5. 50 to 59 minutes
6. 60 to 69 minutes
7. 70 to 79 minutes
8. 80 to 89 minutes
9. 90 or more minutes

15

Interviewer's name: _____

16 17